

## IQXO-22, -23 CLOCK OSCILLATORS

ISSUE 20; 1 NOVEMBER 2010 - RoHS 2002/95/EC

Not recommended for new designs

### Description

- Standard 8pin DIL 5.0V supply crystal oscillator
- Available with or without a standby function
- Crystal oscillator in an 8pin DIL package hermetically sealed
- For parts that meet tougher environmental specifications please see our IQXO-35 and IQXO-36 range
- For parts that meet tough environmental specifications and military temperature range please see our IQXO-85 and IQXO-87
- For individually screened parts that meet tough environmental specifications and military temperature range please see our IQXO-86 and IQXO-88
- Fast Make capability: CFPP-23 series programmable oscillators are the nearest equivalent fast make model

### Frequency Range

- 500kHz to 160MHz

### Output Compatibility & Load

- HCMOS/TTL
- Drive Capability: 50pF max or 10TTL (<70.0MHz) 30pF max (70.0 to 160.0MHz)
- No Standby Operation (IQXO-22)
- Standby Operation (IQXO-23)

### Frequency Stabilities

- $\pm 25$ ppm,  $\pm 50$ ppm,  $\pm 100$ ppm (over operating temperature range)

### Operating Temperature Ranges

- 0 to 70°C
- 40 to 85°C

### Storage Temperature Range

- 55 to 125°C

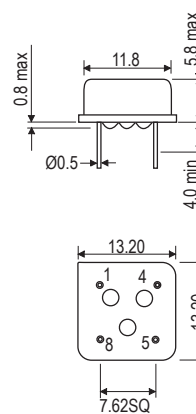
### Standby Operation (IQXO-23)

- No connection or Logic '1' to pin 1 enables oscillator output
- Logic '0' to pin 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
- Maximum 'pull-down' resistance required to disable output = 20k $\Omega$
- Standby Current: 50 $\mu$ A typical

### Environmental

- Terminal Strength: 0.91kg max force perpendicular to top and bottom
- Hermetic Seal: Not to exceed  $1 \times 10^{-8}$  mBar litres of Helium leakage
- Solderability: MIL-STD-202E, Method 208C
- Vibration: 0.76mm displacement, 10Hz-55Hz, 1min in 3 mutually perpendicular planes, duration 2hrs each plane

### Outline (mm)



Pin Connections  
 1. N/C or Standby Operation  
 4. GND  
 5. Output  
 8. +Vs

- Rapid Change of Temperature over Operating Temperature Range: 10 cycles
- Shock: 981m/s<sup>2</sup>, 6ms, 3 times in each of 3 mutually perpendicular planes

### Packaging

- Bulk

### Order Information Required

- Frequency\*
- Model\*
- Output
- Frequency Stability\*
- Operating Temperature Range\*
- Supply Voltage

### Example

- 20.0MHz IQXO-22  
HCMOS  $\pm 50$ ppm 0 to 70C 5.0V



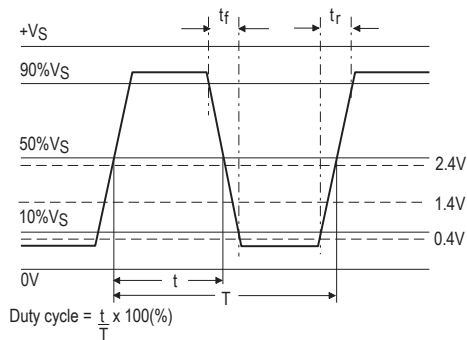
**Electrical Specifications - maximum limiting values**

Frequency Range	Frequency Stability	Supply Voltage	Supply Current	Rise Time (tr) (10-90%)	Fall Time (tf) (90-10%)	Duty Cycle	Model Number
500.0kHz to <5.0MHz	±25ppm ±50ppm ±100ppm	5V±0.25V	20mA	15ns	15ns	45/55%	IQXO-22, -23
5.0MHz to <16.0MHz				10ns	10ns		
16.0MHz to <30.0MHz			30mA	8ns	8ns		
30.0MHz to <50.0MHz							
50.0MHz to <70.0MHz			50mA	6ns	6ns	40/60%	
70.0MHz to 160.0MHz			70mA	5ns	5ns		

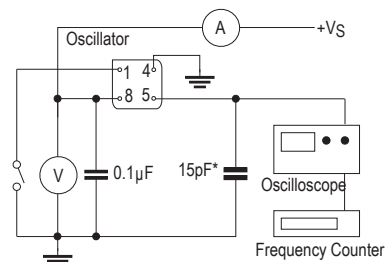
Please note that the rise and fall times listed are the maximum values we specify to cover various frequency breaks. In practice the actual values are generally lower depending upon the spot frequency chosen. For typical values please contact our sales offices

Note: For other frequency/specification combinations, please contact our sales offices

**Output Waveform**



**Test Circuit**



\*Inclusive of jigging and equipment capacitance

Note: Pin 1 = No connection on non standby option models

